

EXHIBIT A

STANDING OPERATING  
INSTRUCTIONS TO DAM TENDER

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to the

WATER CONTROL MANUAL

for

**SEPULVEDA DAM AND RESERVOIR,  
LOS ANGELES RIVER**

Los Angeles District  
U.S. Army Corps of Engineers

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Sepulveda Dam Reservoir Regulation Schedule  
(for rising and falling stages)

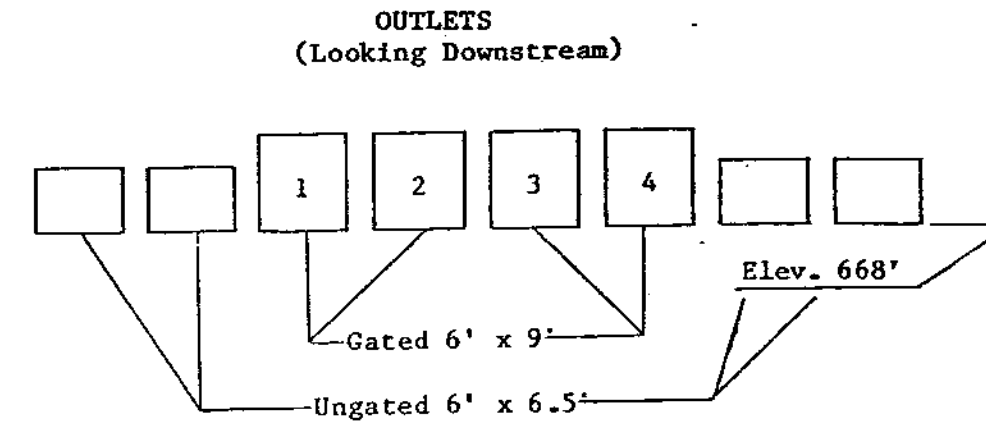
Step No	When reservoir water surface is between elevation	Gate setting for gates as indicated				Computed discharge*	Downstream gage height
		No. 1	No. 2	No. 3	No. 4		
	Feet, NGVD	Feet of opening	Feet of opening	Feet of opening	Feet of opening	Cubic feet per second	Feet
1....	668.0 & 710.2	9.0	9.0	9.0	9.0	0 to 16,780	0 - 13.61
2....	710.2 & 710.7	7.6	9.0	9.0	7.6	15,770 to 16,550	13.14 - 13.48
3....	710.7 & 711.3	7.6	7.6	7.6	7.6	15,530 to 16,830	13.04 - 13.66
4....	711.3 & 711.6	6.0	7.6	7.6	6.0	15,870 to 16,760	13.18 - 13.60
5....	711.6 & 712.0**	6.0	5.7	5.7	6.0	15,680 to 16,890	13.09 - 13.67
6....	712.0 & 712.2	0.0	4.5	4.5	0.0	13,420 to 16,620	11.95 - 13.52
7....	Above 712.2	0.0	0.0	0.0	0.0	14,400+	12.45

\*Includes discharge of ungated outlets. Crest gates in action above elevation 710.0 feet, NGVD (National Geodetic Vertical Datum).

\*\*At elevation 712.0 feet, NGVD, crest gates automatically begin to lower.  
At elevation 715.0 feet, NGVD, crest gates are completely lowered.

DAM OPERATOR INSTRUCTIONS

1. Communication with the District Office is available.
  - a. Notify the Reservoir Operations Center when a gate change will be required according to the schedule.
  - b. Notify the Reservoir Operations Center if unable to set the gates as instructed.
2. Communication with the District Office is not available.
  - a. Try to reestablish communications through the Los Angeles County Department of Public Works (WUK 4470).
  - b. (i) Rising Stages. Allow a period of one half hour to pass to reestablish communication with the District Office. If after one half hour communication is not reestablished follow the gate operation schedule.  
  
(ii) Falling Stages. Maintain current downstream gage height until communication is reestablished.
  - c. If one of the gates cannot be operated, adjust the remaining gates gradually until the downstream gage height agrees with scheduled values. Keep a close check on gage height and change the gate openings as often as required. If the downstream gage height is not obtainable, adjust the gates that are functioning so that the gate openings are equal to the sum of the openings shown in the schedule.



## 1. GENERAL

a. This exhibit is prepared in accordance with instructions contained in EM 1110-2-3600, paragraph 9-02, (Standing Instructions to Project Operators for Water Control), and ETL 1110-2-251 and pertains to duties and responsibilities of the dam tender in connection with the operation of Sepulveda Dam and the reporting of required hydrologic data.

b. Operation instructions to the dam tender are outlined with specific emphasis on flood emergencies when communication facilities between the dam tender and the Reservoir Operation Center (ROC) have been disrupted. This exhibit is designed to be used in conjunction with the rest of the water control manuals. Plates and tables referred to in this exhibit that are used in the main body of the water control manual are not duplicated. The only exception to this is the reservoir regulation schedule, which is duplicated in this exhibit. Other plates or tables such as chain of command for reservoir operations decisions, etc., that are in the main body of the manual are referenced in this exhibit as necessary. This avoids duplication of work and the possibility of two versions of one table in the same water control manual.

c. The dam tender is required to have available at the dam other pertinent book that complement these standing instructions. These books are the current year's Orange Book - "Instructions for Reservoir Operations Center Personnel," the "Sepulveda Dam Flood Emergency Plan" and the "Operation and Maintenance Manual for Sepulveda Dam."

## 2. RESERVOIR OPERATION REQUIREMENTS

Sepulveda Dam should be operated for flood control according to the reservoir regulation schedule which is included at the front of this exhibit and is also shown on plate 7-02. The flood control objective for Sepulveda Dam is to minimize flood damage and the flood risk to public safety along the Los Angeles River downstream from the dam.

Plate 7-01, which depicts the storage allocations for the reservoir, shows that the entire space of the reservoir below the spillway crest (crest gates in raised position-710 feet, NGVD) is devoted to flood control.

## 3. OPERATION RESPONSIBILITIES

The primary responsibilities for operating Sepulveda Dam are delegated to units of the Engineering Division and Construction-Operations Division of the Los Angeles District, U.S. Army Corps of Engineers, as outlined below. The chain of command for reservoir operations decisions is given in table 9-01.

a. The Reservoir Regulation Unit (Reservoir Regulation Section, H&H Branch, Engineering Division) responsibilities are:

(1) Obtain current hydrometeorological data and weather forecasts from the region.

(2) Establish and update water control criteria for flood and nonflood periods and document in water control manual.

(3) Monitor meteorologic conditions, activate the Reservoir Operations Center (ROC), analyze current reservoir and hydrologic data, and issue appropriate water control instructions to the dam tender.

(4) Initiate the call out of mobile channel observation teams.

(5) Coordinate the control of water with, and make notifications to pertinent organizations. Keep up to date on all temporary conditions and actions that are restrictive or that require a change to established water control practices.

(6) Prepare daily, monthly and other special reports relative to the control of water at the reservoir and keep district management and higher authority offices informed of ongoing water control activities.

(7) Advise the District Engineer, through the chain of command, whenever there is evidence that Sepulveda Dam will not be able to provide flood protection along the Los Angeles River.

b. The Water Control Data Unit (Reservoir Regulation Section, H&H Branch, Engineering Division) responsibilities are:

(1) Maintain and supervise the operation of all hydrologic recording and telemetry system equipment.

(2) Calculate and maintain a record of all hydrologic data including stage, inflows, outflows, storage, weather data, etc.

c. The Dam Tender's responsibilities are:

(1) Be present at the dam when rainfall or runoff occurs as requested by the Reservoir Regulation Unit through appropriate supervision.

(2) Ensure that all equipment at the project, including recording and indicating gauges, gate mechanisms, power units, radio, etc., are in good operating conditions.

(3) Operate the gates in accordance with instructions from the Reservoir Regulation Unit, Engineering Division.

(4) Follow the reservoir regulation schedule provided at the front of this exhibit and also shown on plate 7-02, during communication outage with the Reservoir Operation Center (ROC), as outlined in the following paragraph 8.

(5) Reports all pertinent conditions at the dam on a real time basis such as the trash buildup on the trash rack, hydraulic connections of stage recorders, erosion problems, conditions of the embankment, hazardous

public actions at the project, intensity of rainfall and any other conditions pertinent to the safe and successful operation of the dam.

(6) Maintain records, including water surface elevations, outflow gauge heights, precipitation amounts, gate openings, and log all radio and telephone calls forms prescribed in paragraph 12.

(7) Periodically test/operate the gates and electrical facilities in the control house, and inspects all structures sand equipment according tot he preestablished schedule.

(8) Refer to the O&M manual for instructions on actual operating procedures for all mechanical equipment.

(9) Follow a preestablished plan to call in the alternate operator to continue staffing on the next shift as advised by the ROC.

#### 4. GATE/VALVE OPERATION

##### a. Outlet Slide Gates.

###### (1) General.

The four outlet slide gates are hydraulically controlled from a manually operated-valve manifold located in the control room. The dam tender should refer to O&M manual for instructions on actual operating procedures.

###### (2) Outlet Gate Change Procedure.

The Reservoir Regulation Unit (Reservoir Regulation Section-Engineering Division) will order the dam outlet gate changes via the District's voice radio system. The Reservoir Regulation Unit will provide settings for all four gated outlets whenever a gate change is necessary. The dam tender should implement gate changes immediately following acknowledgment of radio instructions. IF the performance of other concurrent activities require a delay in implementation of a gate change, the dam tender should advise the ROC through radio call sign WUK 4ROC and wait for guidance. The concern is the delaying a gate change may have serious impacts on affected activities. Once the gate change is completed, the dam tender should radio back a report of the time that the change was completed the staff and tape reading, and the setting of all four gates after the change was completed. All individuals involved should strive for complete clarity regarding gate settings. The dam tender should immediately alert the ROC through radio call sign WUK 4ROC whenever the requested gate change cannot be fully implemented due to mechanical or other physical problems. For example, thrash occasionally prevents full closure of a gate. The problem should then be evaluated and further instructions provided to the dam tender by the ROC.

### (3) Coordination Between ROC and Dam Tender.

The Reservoir Operation Center should keep the dam tender apprised of operations objectives and critical operations a constraints whenever possible. This will afford the dam tender with a greater opportunity to recognize and identify field problems. The dam tender shall notify the ROC whenever a water surface elevation level is reached corresponding to a gate setting step on the reservoir regulation schedule shown on the front of this exhibit. The ROC may also provide water surface elevation criteria, such that the dam tender shall call the ROC at radio call sign WUK 4ROC when the reservoir pool reaches the specific elevation. This action will normally be conducted during periods of intense storm runoff and will require the dam tender to stay at the control house.

ROC personnel should appraise dam tender when gate operations will be "off-schedule" or "non-routine". In turn, the dam tender should not delay implementation of the non-routine operations by asking informational questions. Such questions are better answered after the gate change is implemented. However, the dam tender should always question gate operations that pose obvious dangers to people or disruption to sanctioned activities in the reservoir or in the downstream channel. The objective is to avoid costly time delays to the gate change process. The resulting time delay to address the question could, in itself, generate unnecessary overtime. All dam tenders should seek clarification of the desired gate setting in feet of opening and the desired time of change whenever necessary.

#### b. Crest Gates.

(1) The crest gates control is a combination of manual and full automatic operation. The crest gates are normally operated in an automatic mode, and rise and fall in response to changes in the reservoir water surface elevation.

(2) The automatic operation mode may be overridden by manual control, however the process is cumbersome and slow (20-30 minutes per gate) and shall not be implemented unless the ROC determines it is necessary in order to minimize unusually high spillway flows.

### 5. NORMAL OPERATION PROCEDURES

Sepulveda Dam under normal operation procedures is operated for flood control on the Los Angeles River according to the reservoir regulation schedule provided at the front of this exhibit and on plate 7-02. According to this schedule the project should be regulated to pass all inflow through the dam as rapidly as possible. This is achieved by keeping the four gated outlets fully open until spillway flow occurs, and then by progressively closing the gated outlets such that the combined flow from the spillway and from the gated and ungated outlets does not exceed the downstream channel capacity of 16,900 cfs.

It is physically possible, however, and would be desirable, under certain circumstances, for the release rate from Sepulveda Dam to be decreased below what is called for in the schedule. IN addition to Emergency Deviations described in paragraph 9, there are other possible reasons for deviation from the normal release plan such as downstream flooding, construction, maintenance, inspections and other planned or unplanned activities.

#### 6. LIMITATIONS ON STORAGE

There are no legal limitations on storage, as the project boundary is above the maximum operating water surface elevation of 712,2 feet, NGVD.

#### 7. LIMITATIONS RELEASES

The maximum discharge that can be released without exceeding downstream channel capacity is 16,900 cfs. This release would be achieved when all gated outlets are open (as they are supposed to be under normal operation) and the water surface elevation is just above 710 feet, NGVD. Gates at Sepulveda Dam can generally be adjusted in as rapid a manner as possible without concern over the rate or rise of the reservoir water surface elevation. This is possible because the ungated outlets will always be releasing large discharges at times when significant changes in outflow could be achieved through the gated outlets. Concrete lining of the downstream channel precludes concern over bank erosion or sloughing due to sudden gate changes.

#### 8. STANDING INSTRUCTIONS DURING COMMUNICATION OUTAGE

If communication is broken between the dam tender and the Reservoir Regulation Unit (ROC), initially continue releases in accordance with the last instructions from the Reservoir Regulation Unit and make every attempt to reestablish communications. During rising stages if after one half hour communication cannot be reestablished, make releases in accordance with the reservoir regulation schedule, shown at the front of this exhibit and plate 7-02, following dam operator instructions at the bottom of the schedule. During falling stages maintain current outflow until communication is reestablished.

#### 9. EMERGENCY DEVIATION FROM NORMAL REGULATION

Emergence departures from the regulation instructions issued by the Reservoir Regulations Unit may be required because of operating equipment failures, accidents such as drownings, or other emergencies that require immediate action. Under these situations the dam tender should contact the Reservoir Regulations Unit through radio call sign WUK 4ROC for instructions. When the communications are broken or when actions must be implemented within minutes, the dam tender may independently take appropriate actions. The Reservoir Regulation Unit should be notified of such departures as soon as possible. All other nonemergency deviations should be approved by the Reservoir Regulation Unit in advance.



## 10. EMERGENCY NOTIFICATIONS

Emergency notifications are normally made by the Reservoir Regulation Unit. However, if the dam tender loses communication with the District Office, and an emergency notification situation arises, such as an imminent dam failure possible from a major earthquake or a water surface level exceeding elevation 710 feet, NGVD, that will generate spillway flow and downstream channel overflow, the dam tender should make the necessary notifications himself, if possible.

The parties listed below are to be notified immediately upon declaration of an uncontrollable emergency. Notification should include: (a) description of the type and extent of emergency that exists or is impending; (b) advise to evacuate people from flood plains; (c) information on the time that release of hazardous amounts of water began or is estimated to begin; and (d) the dam tender's name and telephone number.

- |  |                |
|--|----------------|
| a. Los Angeles Police Department,<br>Van Nuys Division                   | (181) 989-8383 |
| b. Los Angeles County Sheriff,<br>Disaster Communications Office         | (213) 946-7935 |
| c. California Office of Emergency<br>Services - Headquarters, Sacramento | (916) 427-4990 |
| d. California Highway Patrol<br>24 Hour Communications Center            | 911            |

Upon completing the above notifications, try to reestablish communications with the Los Angeles District Office. Document all notifications made and refer to Orange Book, "Instructions for Reservoir Operations Center Personnel", for more information on additional desirable emergency notifications. Also, refer to the "Sepulveda Dam Flood Emergency Plan" book for further instructions and information. The dam tender should not leave the dam unless his personal safety is in jeopardy.

## 11. MEASUREMENT OF HYDROLOGIC DATA

The dam tender should follow instructions as issued by the Reservoir Regulation Unit on what measurements should be taken and what at what frequency. During normal conditions measurements should be taken daily at 8:00 a.m. During flood situations hourly measurements are usually sufficient. All measurements should be documented. Measurements should include the reservoir staff reading (water surface elevation), the "tape" reading, incremental precipitation since the last report, the downstream discharge gauge reading (if available), the time of these measurements and the settings of each outlet gate at the dam, elevation of the top of the crest gates, and

the initiation and termination of spillway flow. When calling, the dam tender should clearly describe the silt and debris situation at the trash racks and gates. When instruments are not working properly or are stuck in the silt, the dam tender should not call in the erroneous reading, but should rather state the instruments or staff problem. When debris or silt cause the flows to be deceptively perched above the invert or result in a loss of contact with a staff board, the dam tender should call in a descriptive message identifying the limitation and quantifying the average streamflow depth and width or estimated reservoir depth as appropriate.

## 12. REPORTS

Communication with the dam tender for reservoir status reporting and gate change instructions is made using the Los Angeles District's radio system. If the radio system including the dam tender's mobile unit malfunctions, the dam tender will be contacted by telephone. The Record of Calls Form (SPL 188) is to be used each time a message is transmitted by or received at the radio or telephone. Every call will be noted whether it is for a radio check, reservoir report, channel observation, etc. During nonflood situations the dam tender will report daily to the ROC using the Los Angeles District's radio system or by using the telephone. During storm conditions, the dam tender will be instructed on the desired radio reporting time interval by the Reservoir Regulation Unit.

Reservoir reports will be requested whenever appreciable inflow appears imminent and should continue through operation of the structure. Each report information is described in the previous paragraph 11.

In addition to the Record of Calls Form (SPL-188), the dam tender should also use the Flood Control Basin Operation Report Form (SPL-19), and the Rainfall Record Form (SPL-648) to log the rainfall and digital recorder information. These forms should be submitted to the Water Control Data Unit for archiving on a monthly basis. A copy of each of these forms is included in this Water Control Manual as figures 9-01, 9-03, 9-04, and 9-05.